

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 01-279540
 (43)Date of publication of application : 09.11.1989

(51)Int.Cl. H01J 1/30
 H01J 37/04

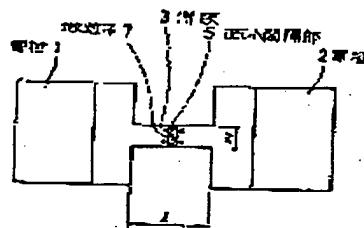
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(54) ELECTRON EMITTING ELEMENT

(57)Abstract:

PURPOSE: To perform individually appropriate selection of material, design, and manufacture by providing a micro-gap in a film by mean of current supply heating, and locating an electron emitting member in this micro-gap.

CONSTITUTION: Fine particles 7 consisting of metal or semiconductor are dispersed in an insulative liquid coating material, and it is coated over a base board 4 followed by a baking process to form a support 6 including fine particles 7. Further a film 3 in a specified shape consisting of metal or semiconductor is formed on this support 6, and conductive metal is deposited on the two ends of this film 3 to form electrodes 1, 2. When thereafter current is supplied to these electrodes 1, 2, cracks are initiated in the middle of the film 3, and a micro-gap 5 is formed in the film 3. Therein the support 6 lies as foundation for the film 3, and an electron emitting element is obtained in which the fine particles 7 are partially arranged in the uncontinuous film part at the micro-gap 5 as an electron emitting member. This enables individual manufacture of electron emitting elements and the gaps 5, which allows selection of suitable material, manufacture, and design for respective components.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]